

**Section 3600****GROUT****PART 1 - GENERAL****1.1 SCOPE****1.1.1 General**

This Specification provides for the furnishing all labor, materials, equipment, and incidentals required for filling joints and setting and anchoring items to masonry and concrete.

1.1.2 Work Included

The Contractor shall, unless specified otherwise, furnish all labor, materials, equipment, tools, and all other associated appurtenances necessary to do the work required under the contract.

1.1.3 Location of the Work

The location of this work is as shown on the bidding documents.

1.1.4 Coordination of the Work

The Contractor shall be responsible for the satisfactory coordination of grouting with other construction and activities in the area. Delays in work resulting from lack of such harmony shall not in any way be a cause for extra compensation by any of the parties.

1.1.5 Working Hours

The work shall be carried out in accordance with local ordinance and not to cause any unreasonable nuisance to affected residents. Under emergency conditions, this limitation may be waived by the consent of Charlotte County Utilities (CCU).

1.2 METHOD OF MEASUREMENT & PAYMENT

Grouting shall be incidental to the work accomplished and compensation shall be included in the cost of the final product such as a manhole, valve vault, grease interceptor, or wetwell.

1.3 REFERENCED STANDARDS (Latest Revision)

ASTM C109, C827

1.4 PARTIAL LISTING OF RELATED SECTIONS

002320 - Gravity Sewer System

002530 - Submersible Sewage Pump Lift Station-Package Design
002540 - Submersible Sewage Pump Lift Station- Standard Design

Note: This is only a partial listing of related sections. The Contractor shall be responsible to review the entire contract documents.

1.5 SUBMITTALS

- 1.5.1 Product data and manufacturer's mixing and installation instructions shall be submitted in accordance with contract requirements.
- 1.5.2 The contractor submittals shall include the statement that the submittals have been reviewed and the materials meet the contract specifications and/or standard details.
- 1.5.3 Final approval is at the discretion of CCU.

PART 2 - PRODUCTS

2.1 MATERIALS

2.1.1 General

The materials used in this work shall be all new and conform to the requirements for class, kind, size and material as specified below:

2.1.2 Acceptable Manufacturers

- a. Specifications include references to designated manufacturers to illustrate minimum acceptable requirements for products.
- b. Substitutions: Products of equal or better quality, function, and performance may be proposed for substitution with approval by CCU.

2.1.3 Non-shrink Cement Grout

2.1.3.1 Non-shrink, non-metallic cement based grout can be used with a minimum compressive strength of 5,000 psi at 28 days when tested in accordance with ASTM C109 and with no shrinkage when tested in accordance with ASTM C827. Grout shall consist of premixed, prepackaged materials requiring only the addition of potable water. Grout shall be Embecco 153 Grout by Master Builders, Five Star Grout by U.S. Grout Corporation, or CCU approved equal.

2.1.3.2 Non-shrink Epoxy Grout: Non-shrink, non-metallic epoxy-based grout shall have a minimum compressive strength of 10,000 psi at 28 days when tested in accordance with ASTM C109 and with no shrinkage when tested in accordance with ASTM C827. The grout shall be a pourable 100% solids epoxy system consisting of three premeasured pre-packaged components. The grout shall be Five Star Grout by U.S. Grout Corporation or CCU approved equal.

PART 3 - EXECUTION

3.1 GENERAL

3.1.1 The Contractor shall only use non-shrink grout for setting equipment, anchor bolts, dowels, bearing plates, and similar applications where shrinkage is not allowed.

3.2 GROUTING

3.2.1 Base and Bearing Plate Grouting: Mix, place, compact, and cure non-shrink cement grout in accordance with manufacturer's instructions.

3.2.2 Machinery and Equipment Base Grouting: Coarse aggregate having a maximum size of 1/4 inch shall be added to non-shrink cement grout. Mixing and installation shall be in accordance with manufacturer's instructions.

3.2.3 Anchor Bolts and Dowels: Drill holes in concrete shall be twice the bolt or dowel diameter. Dowels shall be drilled at a 30° downward angle. Drilled holes shall be thoroughly cleaned using compressed air to remove all deleterious material including dust, debris, and water prior to filling with non-shrink epoxy grout. Grouted holes shall be immediately embedded with items.

3.3 TESTING

3.3.1 The Contractor shall prepare and cure and have tested by an independent certified laboratory in accordance with ASTM standards: one (1) set of four (4) test cylinders for each grout placement for each 50 cubic yards of grout placed in any one day or any fraction thereof.

3.3.2 The Contractor shall provide all results to CCU for review.

3.3.3 The Contractor shall pay for all supplemental testing required if the cylinders break at lower than the required strength and replace all inferior grout material.

3.4 CURING

3.4.1 Grout shall be water cured, cured using curing compounds or waterproof paper and sheeting, or other ASTM approved methods. The minimum curing period shall be 7 days.

END OF SECTION